



# UNITED STATES PATENT AND TRADEMARK OFFICE

HFD

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/602,743	06/24/2003	Andreas Molisch	MH-5145	1006

7590

10/25/2006

Patent Department  
Mitsubishi Electric Research Laboratories, Inc.  
201 Broadway  
Cambridge, MA 02139

EXAMINER
----------

JOSEPH, JAISON

ART UNIT	PAPER NUMBER
----------	--------------

2611

DATE MAILED: 10/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/602,743

Applicant(s)

MOLISCH ET AL.

Examiner

Jaison Joseph

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 June 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 21 and 22 is/are rejected.
- 7) ☒ Claim(s) 8-20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Specification***

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1 – 7, 21 and 22 are rejected under 35 U.S.C. 102(a) as being anticipated by Shattil (USPAP 2002/0034191):

Regarding claim 1, Shattil teaches a methods for shaping a spectrum of an impulse radio signal comprising generating a set of pulses at a plurality of frequencies and a plurality of random delays (see figure 19, component 201 and 204A), weighing the set of basis pulses by weights (figure 19, component 204B), delaying the set of basis pulses by delays (figure 19, component 204C) and combining linearly the weighted and delayed basis pulses to conform the spectrum to a spectrum mask (figure 19, component 210 and paragraph 370).

Regarding claim 2, which inherits the limitations of claim 1, Shattil further teaches shifting frequencies of the weighted and delayed basis pulses before the combining (see figure 19, component 204A).

Regarding claim 3, which inherits the limitations of claim 1, Shattil further teach the weights and delays are fixed over the time for a predetermined spectral mask (see paragraph 370).

Regarding claim 4, which inherits the limitations of claim 1, Shattil further teaches the weights and delays vary over time to adaptively shape the spectrum (see paragraph 370).

Regarding claim 5, which inherits the limitations of claim 1, Shattil further teaches the pulses are Gaussian in form.

Regarding claim 6, which inherits the limitations of claim 1, Shattil further teaches the weighting and delaying are performed by a set of filters and a set of delay lines (it is inherent that applying the weights using the filters and delay a signal using the delay lines) and the combining is performed by an adder (see figure 19, component 210).

Regarding claim 7, which inherits the limitations of claim 1, Shattil further teaches evaluating a cost function to determine the weights and delays (see paragraph 376).

Regarding claim 21, the claimed apparatus including the features corresponds to subject matter mentioned above in the rejection of claim 1 is applicable hereto.

Regarding claim 22, which inherits the limitations of claim 21, Shattil further teaches a set of oscillators configured to shift frequencies of the weighted and delayed pulses before the combining (see paragraph 377).

***Allowable Subject Matter***

Claims 8 –20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jaison Joseph whose telephone number is (571) 272-6041. The examiner can normally be reached on M-F 9:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

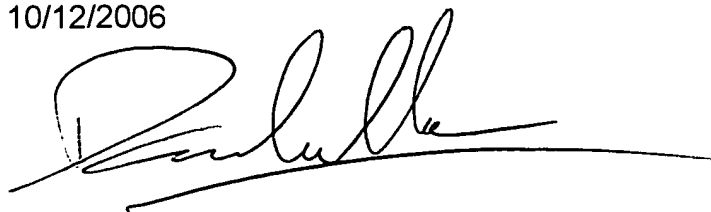
Application/Control Number: 10/602,743

Page 5

Art Unit: 2611

Jaison Joseph

10/12/2006

A handwritten signature in black ink, appearing to read 'Jaison Joseph', with a long horizontal line extending from the end of the signature.

**DAC HA  
PRIMARY EXAMINER**